Rural Spinal Cord Injury Project

A collaborative project between:

Prince Henry & Prince of Wales Hospital

Royal North Shore Hospital

Royal Rehabilitation Centre Sydney

Australian Quadriplegic Association

Paraplegic & Quadriplegic Association of NSW

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An overview of

OCCUPATIONAL THERAPY INTERVENTION

for adults with Spinal Cord Injury

Useful Strategies for Occupational Therapists

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MOTOR ACCIDENTS AUTHORITY

Functional independence following spinal cord injury (SCI)

A person's functional independence has a major impact on their quality of life, sense of self worth and consequential social participation. Some people will have the ability to achieve a high level of independence and others limited by their physical capacity will be able to achieve a level of independence through directing their care. Whilst it is reasonable to expect that the degree of functional independence achievable is dependent on a person's lesion level, a person's neurological level should not be viewed as strictly predictive but rather as indicative of potential function. It is important to avoid comparisons between individuals with similar levels of injury, as there are many factors impacting on an individual's functional performance (see Table 1).

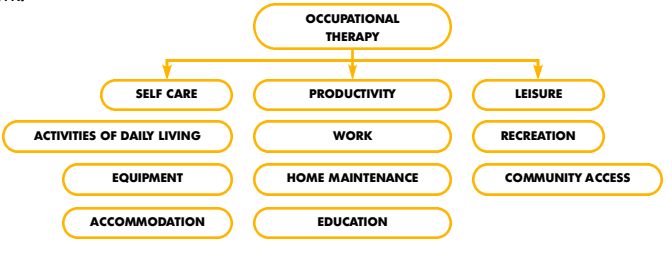
Table 1: Factors Impacting on Functional Performance

- Neurological level (tetraplegia versus paraplegia)
- Degree of impairment (i.e. complete vs incomplete)
- Age and gender
- Other injuries or medical conditions (e.g.fractures, nerve injuries, cardiac disease, arthritis, etc)
- Physique (body proportions/weight distribution)
- Cognition/motivation (e.g. Traumatic Brain Injury (TBI), depression)
- Mental illness (e.g. schizophrenia, personality disorder)
- Drug and alcohol abuse
- Social supports/cultural expectation
- Financial resources
- Environmental factors

It is important to note that a person's level of function may change with ageing. There is a complex interaction of age at injury, duration post-injury and impairment. It is therefore essential to factor in functional decline with ageing. Musculo-skeletal problems with overuse syndromes are common (e.g. 30% at 5 yrs, › 50% at 15 yrs in persons with complete paraplegia). On average, the need for assistance doubles over 25 yrs. The last functional skills mastered are often the first to go!

Models of Occupational Therapy Practice

In OT, there are a number of theoretical models or frameworks from which to base clinical practice. The NSW Spinal Unit OT Departments operate within the following basic clinical framework:



SELF CARE

Expected Levels of Functional Independence and Associated Equipment Needs

Note: Tables 2a-g below are not absolute nor prescriptive – people will have different needs depending on the factors outlined above in Table 1. It is important to contact therapists working in the field of SCI management if queries arise.

Not included in this table is assistive technology (computer equipment and environmental control units), however this may be indicated at all levels of SCI.

Table 2A: Expected Levels of Functional Independence and Equipment Needs for C1-4 Levels

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Total assist	Padded seat tilt-in-space shower commode chair (head rest required for C1-3)
Bed mobility	Total assist	Electric hi/lo bed with Trendelenberg and side rails
Bed/wheelchair transfers	Total assist	Electric hoist with sling
Pressure relieving/Positioning	Total assist; may be independent with equipment	Power tilt-in-space wheelchair Specialised pressure relieving cushion Postural support and head control systems. Specialised bed and pressure relieving mattress Hand Splints
Eating/feeding	Total assist	
Dressing	Total assist	
Grooming	Total assist	
Showering	Total assist	Padded seat tilt-in-space shower commode. Handheld shower
Mobility	Manual: Total assist Power: Independent with highly specialised equipment	Manual wheelchair Power tilt-in-space wheelchair and light wieght manual wheelchair with ventilator tray and specialised positioning and control equipment (ventilator tray only for C1-C3)
Transport	Total assist	Modified access van with appropriate lock in system
Assistance required	Personal care housekeeping	

Note: C1-3 Level will require 24 hour Ventilator Assistance. C4 Level can breathe unaided.

Table 2B:
Expected Levels of Functional Independence and Equipment Needs for C5 Level

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Total assist	Padded seat shower commode chair Adaptive equipment
Bed mobility	Total assist	Electric hi/lo bed with Trendelenberg and side rails
Bed/wheelchair transfers	Total assist	Electric hoist with sling Power tilt-in-space wheelchair
Pressure relieving/Positioning	Total assist; may be independent with equipment	Specialised pressure relieving cushion Hand splints Postural support and head control systems Specialised bed and pressure relieving mattress
Eating/feeding	Total assist for set up, then independent eating with equip	WHO wrist cock-up splint Adaptive feeding equipment (eg palmar band)
Dressing	Lower: Total assist Upper: Moderate assist	Adaptive techniques and equipment
Grooming	Moderate to total assist	Adaptive techniques and equipment
Showering	Total assist	Padded seat tilt-in-space shower commode Handheld shower
Mobility	Manual: independent to some assist dependent on ground and floor surface Power: Independent with highly specialised equipment	Ultra lightweight rigid or folding frame wheelchair with modified push rims Power tilt-in-space wheelchair with arm drive (with WHO wrist cock-up splint in situ)
Transport	Independent with highly specialised equipment	Modified access vehicle with appropriate hand controls to drive
Assistance required	Personal care housekeeping	

Table 2C:
Expected Levels of Functional Independence and Equipment Needs for C6 Level

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Total assist	Padded seat shower commode chair or shower chair with cut out for access Adaptive equipment
Bed mobility	Total assist	Electric hi/lo bed or King single size std bed
Bed/wheelchair transfers	Total assist or moderate assist (occasionally independent)	Electric hoist with sling may be required, Sliding board (various)
Pressure relieving/Positioning	Total assist; may be independent with equipment	Power wheelchair may be required Specialised pressure relieving cushion Postural support equipment Pressure relieving mattress or overlay
Eating/feeding	Total assist for set up, then independent with equipment	Adaptive feeding equipment and techniques (palmar band or ringed cutlery)
Dressing	Lower: Moderate to total assist Upper: Moderate assist	Adaptive techniques and equipment
Grooming	Minimal to total assist	Adaptive techniques and equipment (eg C Clip)
Showering	Moderate to total assist	Padded seat shower commode or shower chair. Handheld shower
Mobility	Manual: independent to moderate assist dependant on ground and floor surface Power: Independent	Ultra lightweight rigid or folding frame wheelchair with modified push rims Power wheelchair with arm drive, power tilt-in-space may be required
Transport	Independent driving from wheelchair or in vehicle seat	Modified hand controls to drive, adaptive technique to transfer self and chair into vehicle or with chair hoist
Assistance required	Personal care housekeeping	

Table 2D:
Expected Levels of Functional Independence and Equipment Needs for C7-8 Levels

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Independent to minimal assist	Padded seat shower commode chair with cut out for access. Adaptive equipment may be useful (suppository inserter)
Bed mobility	Independent	Electric hi/lo bed may be indicated or King single or larger ensemble bed
Bed/wheelchair transfers	Independent to minimal assist	With or without sliding board
Pressure relieving/Positioning	Independent to minimal assist	Pressure relieving cushion Postural support equipment as indicated Pressure relieving mattress or overlay
Eating/feeding	Independent	With or without adaptive equipment and techniques
Dressing	Independent to minimal assist	With or without adaptive techniques and equipment
Grooming	Independent	With or without adaptive techniques and equipment
Showering	Independent to minimal assist	Padded seat shower commode or shower chair without armrests. Handheld shower
Mobility	Manual: independent to minimal assist dependant on ground and floor surface Power: Independent	Ultra lightweight rigid or folding frame wheelchair with modified push rims Power wheelchair may be required
Transport	Independent driving from wheelchair or in vehicle	Modified hand controls to drive, adaptive technique to transfer self and chair into vehicle or with chair hoist
Assistance required	Personal care housekeeping	

Table 2E:
Expected Levels of Functional Independence and Equipment Needs for T1-9 Levels

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Independent	Padded seat shower commode chair or shower chair with cut out for access
Bed mobility	Independent	
Bed/wheelchair transfers	Independent	With or without sliding board
Pressure relieving/ Positioning	Independent	Pressure relieving cushion Postural support equipment Pressure relieving mattress or overlay
Eating/feeding	Independent	
Dressing	Independent	Adaptive techniques
Grooming	Independent	
Showering	Independent	Padded seat shower commode or shower chair without armrests. Handheld shower
Mobility	Independent	Ultra lightweight rigid or folding frame wheelchair
Transport	Independent driving in vehicle	Modified hand controls to drive, adaptive technique to transfer self and chair into vehicle or with chair hoist
Assistance required	Personal care (when required) housekeeping	

Table 2F:
Expected Levels of Functional Independence and Equipment Needs for T10-L1 Levels

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Independent	Padded seat shower commode chair or shower chair without armrests
Bed mobility	Independent	King single or larger size bed
Bed/wheelchair transfers	Independent	With or without sliding board
Pressure relieving/ Positioning	Independent	Pressure relieving cushion Postural support equipment Pressure relieving mattress or overlay
Eating/feeding	Independent	
Dressing	Independent	Adaptive techniques
Grooming	Independent	
Showering	Independent	Padded shower commode or shower chair without arms Handheld shower
Mobility	Independent	Ultra lightweight rigid or folding frame wheelchair
Transport	Independent driving in vehicle	Modified hand controls to drive, adaptive technique to transfer self and chair into vehicle or with chair hoist
Assistance required	Personal care (when required) housekeeping	

Table 2G:
Expected Levels of Functional Independence and Equipment Needs for L1-S5 Levels

Task/Activity	Expected Functional Outcome	Equipment
Toiletting	Independent	Padded toilet seat
Bed mobility	Independent	Ensemble bed
Bed/wheelchair transfers	Independent	With or without sliding board
Pressure relieving/ Positioning	Independent	Pressure relieving cushion Postural support equipment as indicated
Eating/feeding	Independent	
Dressing	Independent	Adaptive techniques
Grooming	Independent	
Showering	Independent	Padded shower commode, bench or shower chair Handheld shower
Mobility	Independent	Ultra lightweight rigid or folding frame wheelchair
Transport	Independent driving in vehicle	Modified hand controls to drive, adaptive technique to transfer self and chair into vehicle or with chair hoist
Assistance required	housekeeping	

Adapted from: Paralyzed Veterans of America (1999) and Reading from: Hammell, K.W. (1995).

Refer to: The Motor Accident Authority "Guidelines for Levels of Attendant Care for People who have a spinal cord injury and can claim under the New South Wales Motor Accidents Scheme". www.maa.nsw.gov.au/pdfs/spinal_cord_injury.pdf

Skin Management

Following SCI:

- Skin sensations are felt differently or not at all
- Decreased mobility causes pressure on the skin not to be relieved as it normally would be
- Spasm may cause shearing damage as it is rubbed against bedding, clothing & W/C parts
- Muscle wasting causes tissue to lose vitality
- Compromised blood circulation delays healing

After SCI, the skin is much more vulnerable to breakdowns. Pressure areas will develop if precautions are not taken. When skin breakdown has occurred it is important for the client to have a full review from all members of the multi-disciplinary team. **Please seek specialised medical and/or nursing advice regarding reasons for skin breakdown and recommended treatment.**

A person with a pressure area is placed, where possible, on complete bedrest (positioned off the site of pressure). When the pressure area has been healed, they are then placed on a seating protocol to grade their return to sitting in a wheelchair.

Once the person's pressure area has healed, from an OT perspective, it is important to review their equipment to reduce the risk of recurring skin breakdown. Things that need to be considered are:

- Are they getting adequate pressure relief? All seating surfaces need to be assessed – car seats, wheelchair cushions, toiletting and showering equipment.
- Mattresses – Are they getting adequate pressure relief?
- Transfers - Are they clearing all surfaces well?
- Ability to check their own skin? Long handled mirrors or assistive techniques can assist.
- How is their seated posture? For example: someone with a pelvic obliquity may bear more weight (and more pressure) on one ischial tuberosity.
- Does the equipment suit their needs?
- Is the equipment poorly maintained or ill-fitted?
- Have they had a decline in function?

When assessing these surfaces it may be useful to use a system to measure interface pressure, such as the Talley meter, or a pressure mat mapping system such as the FSA. This may require a referral to a seating clinic. For further information on pressure area care, and or prevention, contact one of the spinal units, ParaQuad or AQA.

Self care equipment – funding processes

Equipment for people with Spinal Cord Injuries is provided through one of four main sources:

1. PADP (Program of Appliances for Disabled People)

"The Program of Appliances for Disabled People (PADP) is a NSW Government program for people with disabilities. The role of PADP is to assist eligible residents of NSW who have a permanent or long-term disability to live and participate within their community by providing appropriate equipment, aids and appliances" (NSW Health, 2001).

- Initial equipment for people with new spinal cord injuries are provided through the Spinal Set-up Funds attached to the two acute spinal units in NSW at Royal North Shore Hospital (RNSH) and Prince of Wales Hospital (POW). Following discharge from hospital, equipment and ongoing repair services are provided from the local area PADP Lodgment Centre.

- A copy of the PADP Policy is available from local Lodgment Centres or on the NSW HealthWeb at www.health.nsw.gov.au/fcsd/rmc/cib/circulars/2000 (Circular 103)

Community Options may be able to assist with purchasing urgently needed items when PADP have no money available. Look up your local office in the White Pages under Community Options.

2. Privately funded by the client (if not eligible for any other assistance)

3. Department Of Veterans Affairs (DVA) See contact list for DVA details

4. Compensation for Personal Injury

a. Third Party Personal Injury Compensation (CTP)
   See www.maa.nsw.gov.au/pdfs/spinal_cord_injury.pdf for details regarding the Motor Accident Authority Guidelines for CTP claims.

b. Workers Compensation — See contact list for WorkCover details.

c. Common-law Negligence Actions — See contact list for Law Society details.

d. Sporting Injuries Insurance Scheme — See contact list for details.

e. Victims Compensation Scheme — See contact list for details.

Self care – Types of equipment
bedroom equipment

Beds

Features:

- Hi-Low function (electric or manual)
- Trendelenberg function (horizontal tilt of complete bed surface)
- Knee bend
- Head raise
- Self-help pole
- Head board and foot board and bolster
- Cot (bed) sides
- Switch adaptations
- Compatibility with an environmental control unit (ECU)

Control Options: (See picture below)

Electric beds can be customised to be controlled by any switch, and in some cases through an environmental control system. Where this is available, it can greatly enhance a person's life. Examples of the type of switch adaptations available for persons with limited hand function are Sip and Puff, Joystick, Rocker and Toggle.

Considerations:

When prescribing a bed it is important to consider the following:

- High – low height for safe functional transfers. This may also decrease the incidence of shoulder injury over a period of time.
- A person may be able to independently adjust their position (eg. Sitting up, lying down) which can decrease the amount of care required.
- Head raise for persons who are unable to sit up independently. Knee bend to prevent sliding down the bed. Leg elevation for persons with oedema.
- Under bed clearance to enable hoist access for transfers.
- Castor size for manoeuvrability. Larger castors are easier to manoeuvre.
- Minimum and maximum height for independent transfers and carer OH&S.
- Size of bed to enable personal care tasks to be completed (by a carer or bed user).
- Attachment sites for over night drinking system, or mattress pump etc.
- Size of the bed to enable partners to continue to sleep in the same bed, or in some cases the attachment of a partner bed.

Pressure care mattresses and overlays

Types:

Pressure care mattresses are designed to relieve or reduce interface pressure. Pressure relieving mattresses are segregated into either mattress replacements or mattress overlays. A mattress overlay is used in addition to an existing mattress. Different mediums can be used, for example air and foam. Types include a RoHo mattress or AutoXcell.

A mattress replacement is used in place of an existing mattress. Different mediums can be used, for example air and foam. Types include a Nimbus III alternating air mattress or a Vaperm.

Considerations:

In addition to pressure care, a mattress must also enable a person to maintain their level of independence. For example consider:

- Stability of surface for function, ie transferring onto wheelchair
- Surface height for functional transfers
- Any change in surface level for carer's OH&S
- Stability of surface for bed mobility and dressing
- Bed size and height for partners

NB: Pressure mattress suppliers include Huntleigh Healthcare, Pegasus Wooltech, Starwell & Roho

Hoists

Types	Slings	Customisations
Manual Electric Ceiling mounted Pivot frame Yolk spreader bar Vehicle Mobile	Standard type Toiletting type Two piece Banana type (for pivot spreader bar)	'Silk' or 'sheepskin' sleeve for inner sling/thigh (minimise shear) Some companies custom make slings, to measurements and/ or have a large range of various sized slings (ie small/long, extra large/long etc)

Clinical Rationale:

A hoist may be required for the following reasons:

An inability to transfer due to increasing age, decrease in upper limb strength, shoulder overuse injuries, carer limitations, increased weight, frailty (of client or carer), presence of pressure areas.

It may be that a more expensive and specialised hoist may decrease human cost and increase quality of life for the user. This is worth considering, especially for people with a high level SCI.

Considerations:

The type of hoist and sling required is dependent on the following:

- Level of injury/function
- Age, height, weight
- Skin integrity
- Carer's abilities and availability
- Psychosocial needs
- Ability to comply with usage
- Environmental considerations and a place where transfers need to take place ie. bed, chair, vehicle etc. Clearance for mobile hoist under bed and circulation spaces.

- Client comfort when using hoist
- Carers OHS requirements
- Cost efficiency

Suppliers of Commonly Prescribed Hoists for SCI
(see contact list for supplier details)
ARJO: Trixie, Lisa, Tempo & Bianca (ceiling Hoist)
AMS: Promed: Delta, Skipper, Alpha & Voyager (ceiling Hoist)

Promed Elf with standard yolk

MOBILITY EQUIPMENT

Manual Wheelchairs for people with a SCI

For a person with a SCI, who uses a manual wheelchair (MWC) for mobility, it is essential for them to have a custom made lightweight wheelchair. This is to maximise independence in wheelchair propulsion, transportability, skin care and to minimise shoulder wear and tear. Types:

- **Rigid frame:** A rigid frame is the lightest frame and the most energy efficient for propulsion. A rigid frame is the easiest option to dismantle and position in a car independently for a person with a SCI.
- **Folding frame:** A folding frame is less energy efficient for wheelchair propulsion, however it can be folded, stored, and also can be used with car hoists, eg WYMO hoist.

Quickie GPV

Quickie XTR & Jay Extreme back

A checklist of features of Manual Wheelchairs (Adapted from Karcz, 2002)

Wheels

Adjustable axle position – alters position of rear wheels. This can change the centre of gravity, wheel camber, wheelbase, seat height. Thus it can increase a wheelchairs responsiveness.

Camber - Degree of tilt of the wheel in relation to the frame. The higher the degree, the more responsive the chair is to propel. However camber affects the overall width of the

wheelchair and must be considered for door widths etc.

Type of wheel- affects the maintenance, the endurance of the tyre and the weight eg. Spynergy spoke or mag wheels.

Quick release – detaches wheels for transportation

Type of Tyre

Pneumatic tyres (give a softer ride, but may puncture)– standard, high pressure (slightly harder, easier to push), bush'n'beach (like BMX tyres) Solid tyres – can be heavier to push, providing less cushioning, however they do not puncture.

Pushrims

Distance from hub is important to allow the space for thumb when pushing. Finish

slip resistant or plastic coated / hard anodised can assist someone with decreased hand function.

Diameter of tube - a larger diameter can assist grip

Push handles

They can be used to assist with balance, by hooking the arm around the back.

Height - important for carer

Castors

Solid – No maintenance. Often narrow, which can get caught in gutters. In most cases for SCI, solid castors are recommended, with a 4 or 5 inch size Pneumatic - require maintenance, but have a softer ride and are heavier to propel.

Roller blade - more usually found on sports style wheelchairs - decrease wheelbase, increase manoeuvrability, not great outdoors or on uneven terrain. Persons with high wheelchair skills may elect to use these and do wheelstands over objects.

Size – will affect manoeuvrability outdoors

Armrest

Fixed or detachable or swing away. Often no armrests as they can interfere with function

Brakes

Push or pull on - choice depends on users ability

High or low mounted - consider reach of user and whether brake interferes with transfers or with propulsion (jamming thumbs).

Extended handle - to assist with limited reach or hand function

Scissor brakes – fold under frame when not in use, requires dexterity and balance to manipulate. Good for transferring wheelchair into car and for hand clearance when pushing.

Footplates and Foothangers

Fixed or swing-away and/or detachable

Height adjustable

Heel or calf support (often a calf strap is indicated)

Angle adjustable footplates - eg for fixed ankle contractures

The "hanger angle" (ie 90° straight down and 70° out in front) is important for the overall turning circle of the chair. However a smaller angle may be indicated due to spasm, pain or comfort.

Backrest

Straight or angled backrest canes

Height /Angle - adjustable or fixed, seat to backrest angle

Fold down - reduces overall size of folded chair, however it can affect strength of backrest

Can consider custom made or commercially available rigid backrest if required eg Jay back. These add weight to the wheelchair. Adjustable upholstery may be an alternative postural solution.

Accessories

Tray / Lapboard - removable

Spoke guards

Anti tippers - standard on many wheelchairs

Frame protectors (for front / legrest hangers)

Frogs legs (castor fork with suspension)

Clothesguards - plastic or material

Manual or power stand up wheelchair

Commonly Prescribed Manual Wheelchairs for people with SCI

See contact list for supplier details. (These can be used as a resource)

Power Wheelchairs for people with SCI

Quickie Manual	**Mobility Plus**	**Mogo**
E&S Hyde Wheelchair Sales Rigid & Folding	GTK Rehab Rigid & Folding	Mogo Wheelchairs Customised Rigid & Folding
Invacare Action	**RGK manual & sports Colours Range**	**Glide Wheelchairs**
Northcott/Dynamic Living Designs Rigid & Folding	DeJay Medical & Scientific Rigid & Folding	Active Mobility Systems Specialised wheelchair company Rigid & Folding

(Adapted from Independent Living Centre Power Wheelchair Guidelines)

Powered wheelchair options

- Indoor/Outdoor
- Front-Wheel Drive
- Mid-wheel drive
- Rear wheel drive
- Elevating-seat
- Four wheel drive
- Outdoor Heavy Duty
- Stand-up
- Reclining back (manual or electric)
- Powered wheelchair with manual option
- Attendant controlled
- Tilt-in-Space

M1 Rollerchair

Points to consider

- Consider the nature of a person's disability, their level of injury and function
- Method and ability to transfer
- Ability of the carer to dismantle and maintain wheelchair and charge batteries
- The user's environment. Will they be able to access hallways, doors and under benches etc.
- Can the wheelchair be loaded into a car or van?
- Will a hoist and/or ramps be required to transport?
- Where will the wheelchair be stored eg? in the home and/or in a vehicle?

Features of powered wheelchairs

Design · Is it folding? · Is it a base unit with detachable rigid seat? · What is the overall weight and weight of heaviest part?	**Seat** · Is it a sling seat or a rigid seat? · What postural supports are required?	**Armrests** · Detachable or fixed · Adjustable · Flip-up · Desk style to increase under tables
Batteries · What is their range before recharging is required? · Recommend 36 a/h (min) or 50 a/h for full time user. · What is their weight? · What is their life expectancy?	**Motor** · How responsive is it? This can be programmed for each individual. · What weight is it? · How easy is it to remove? · What is the capacity?	**Brakes** · Are they electro-magnetic brakes? · Is there an additional manual hand brake?
Control Method · Joy-stick or adapted hand control · Chin control · Sip-puff control · Head control · Attendant control	**Backrest** · Fixed-angle · Reclining · Fold down · Removable · Type (standard or postural back eg Jay Back)	**Footplates** · Fixed or detachable · Adjustable height · Elevating legrests · Heel/calf support

Wheels

- The choice of wheels and castors affects the manoeuvrability and smoothness of the ride. Consider the environmental requirements eg. farm, street, indoors.
- The overall wheel size affects the clearance and ability to traverse rough terrain.
- Smaller wheels are more suitable for indoor use as they have tighter turning circles.
- Wheels can also be solid (no punctures) or pneumatic (which give a smoother ride).

Commonly Prescribed Power Wheelchairs for people with SCI

(See contact list for supplier details)

Quickie Power Wheelchairs Lifestyle & Rehab	**Rollerchair Powered Wheelchairs** GTK Rehab	**Glide Power Wheelchairs** Active Mobility Systems

Commonly prescribed Pressure Cushions for People with a SCI

- A person with a SCI who is a wheelchair user should sit on a pressure cushion.
- Pressure cushions provide pressure relief as they distribute body weight more evenly over a larger surface area. They prevent all the pressure being taken over the Ischial Tuberosities (IT's) (Queensland Spinal Cord Injuries Service, 2001). They also enhance function as they support the trunk for upper limb function through the maintenance of posture.
- A cushion and w/c should be considered together, as they function as a unit for pressure relief and postural support (Queensland Spinal Cord Injuries Service, 2001).

Single valve HP Roho

Types of Cushions

Different cushions provide varying levels of pressure relief depending on their design, and the material from which they are manufactured (Queensland Spinal Cord Injuries Service, 2001). Some cushions may use a combination of materials to improve their performance. The most common materials used for pressure cushions:

- Gel Filled - various viscosities, heavy, may be floppy to handle, absorbs and conducts heat, airflow is more limited. eg Action cushion
- Standard Foam – Low cost, various densities are available, has contouring properties, allows good airflow, stable, maintenance free, limited life expectancy, needs protection from incontinence, can retain heat.
- Contoured foam - Provides good stability, and postural support. Less maintenance and good durability. Eg Infinity range.
- Custom foam – made in a seating clinic for individual. Eg. Perth cushion. Low cost of materials and can provide high pressure care. Needs to be replaced more frequently.

- Air filled Villous dynamic air cushion (adjustment required) eg High and Low profile ROHO cushion. Very high pressure relief. But not as good heat dissipation or stability as other cushion options. May puncture. More expensive pressure cushion option. Requires education to set up and maintain pressure care setting.
- Contoured foam with fluid insert eg Jay cushion. Provides good stability and durability. Can be very high pressure protection and can provide stability and postural support. More expensive pressure cushion option.

Points to consider when selecting a pressure cushion

· Impaired or nil sensation in buttocks i.e. risk · Whether w/c is set up correctly · History of pressure areas · Weight/shape of wheelchair user	· Continence issues · Heat dissipation · User's ability to relieve pressure · Transfer technique and cushion's stability · Posture · Preference of cushion user/ comfort	· Replacement /durability · Weight of cushion for transporting · Wheelchair design / size · Pain in sitting · Cushion care / adjustment and user or carer's abilities · Cost (QLD SCI Service, 2001)

An important point to remember with the ROHO cushion, is that while they provide very high quality pressure relief, they need to be inflated correctly. When the cushion is both over or under inflated, the cushion user is at risk of pressure areas.

NB: A number of pressure relieving cushions should be trailed (with skin checks) to determine which is the most suitable. If the user is at high risk of pressure areas, a Seating Clinic appointment may be indicated to map pressures, where possible.

Suppliers of Commonly Prescribed Wheelchair cushions for SCI
(See contact list for supplier details)

Jay, Roho, Invacare Infinity GTK Rehab	**Jay** E&S Wheelchair Sales	**Jay, Roho** Lifestyle & Rehab (L&R)
Jay, Roho, Australian Surgical Aid	**Jay, Roho, Custom Maroon commode cushions** Able Rehabilitation	**Roho, Invacare Infinity, Pindot** Northcott/DLD

Sliding Boards

The sliding board is a simple device designed to assist a person transfer with or without assistance. This may include wheelchair, bed, shower commode or vehicle transfers. There are two basic types of sliding boards, the straight and the over-wheel. The over-wheel is unique, as it protects the user's skin from abrasions on the wheel during transfers. This type of slider, however, is not recommended for commode transfers, a straight slider is recommended. A material cover may be used, to protect skin, made from satin or satin/ silk like material

Sheepskin sliding mats are another piece of equipment that can be used by a person to transfer in/out of a vehicle, particularly when a person is unable to physically assist with the transfer. When doing this transfer, the assistance of two carers would also be necessary, to ensure a safe transfer.

Both the over-wheel and straight sliding boards can be purchased from ParaQuad Engineering. The sheepskin sliding mats are available from PECS. See contact list for supplier details.

BATHROOM EQUIPMENT

Commodes:

Types Recommended:

- Folding for transport / or fixed frame
- Attendant propelled
- Self-propelling
- Tilt in space
- Front, right or left side opening
- Closed seat with cutout
- Closed seat with no cutout (for persons with a colostomy)
- Fixed recline/angle in the backrest
- Higher back rest heights
- Elevating legrests
- Pan and pan carrier

Clinical indications:

- For showering and bowel care
- Reduce the need for transfers
- Carer occupational health and safety for clients who are dependent in self-care

A person with paraplegia may elect to use a self-propelling commode to reduce the number of transfers and therefore reduce shoulder wear and tear to maintain independence. For a person who is unable to self-propel a shower commode, an attendant propelled shower commode is recommended. An attendant propelled shower commode is also indicated if there is limited space, as with four small wheels it can move in four directions, thus making handling easier for carer's.

Customisations:

If the commode seat does not provide adequate pressure care, cushions can be added to the seat, such as a Roho commode cushion or a padded gel seat, or gel can be added inside the custom made cushions.

Push handles at the rear of the commode can assist with function for a person who has reduced sitting balance.

For high level lesions postural support can be indicated, such as **troughed armrests**, for access to the upper limb for hygiene, as well as to assist with comfort and posture.

K-care Tilt in space commode and self-propelled, with right side opening custom maroon seat.

Head rests can be added for persons with limited or no head control. **Back extensions** can be added to the commode to increase its back height. Also the back-rest can be fixed in 3-15 degrees of recline to enhance posture. Back rests can be 1 or more strap removable extensions.

A tilt in space commode is indicated if a person has a history of postural hypotension, or has high seating needs, and requires the tilt to stabilise their posture. Rake or front to rear angle can be added to increase seating tolerance. Some commodes have this as a standard feature.

Padded legrests can be added to assist with pressure care for the lower limbs. Elevating legrests are also available.

Anti-tip bars can be placed on the rear of the commode to enhance safety where indicated. A pan and pan carrier is recommended in the event that the user cannot access a toilet.

The seat is the most important part of the commode in terms of pressure care. In order to maintain good pressure care, the seat is designed to distribute as much pressure through the greater trochanters (GT's) whilst maintaining the Ischial tuberosities (IT'S) to "float" in the cutout. A hand made padded seat is essential and can be customised to suit an individual's specific needs. These seats have no joins on the surface where the client will be sitting and thus reduce the risk of pressure care. A double foam layered seat, called a maroon custom seat, is recommended as the foam covers the inside edge of the cutout, which is better for pressure care. This seat has a higher quality foam and a longer life span. K-care is the most commonly prescribed commode for persons with a SCI.

ALTERNATE SHOWERING / TOILETTING EQUIPMENT.

Types recommended:

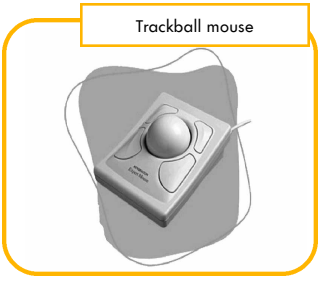
- Shower chair with no armrests and a padded seat
- Bathboard with foam overlay/insert with shower hose
- Transfer bench with closed cell foam and no seams
- Padded toilet seat
- Jiffy Biffy Pads – portable toilet seat cushions
- Shower trolley

Clinical indications:

For a person who can transfer independently, shower transfer benches, or shower chairs with no armrests and padded seats may also be used. Client preference is essential to consider in any equipment prescription. However adequate education is required, supporting the risk of shoulder over use injury associated with transfers. The use of a commode in the morning care routine reduces transfers from seven to three.

COMPUTER EQUIPMENT

Computers are a useful tool for communication, study, vocational opportunities and domestic duties (such as Internet shopping and banking). Most TAFE institutions have a disability officer, who can assess each individual's specific need. TAFE have a commitment to continue courses started in the spinal units, or support new courses at a local level. Computer equipment that is commonly used by people with a SCI include: trackballs, cherry keyboards, voice-activated software. For updated information it may be useful to look at the following websites:


Trackball mouse

· www.abilitycorp.au · www.tecsol.com.au · www.northcott.com.au · www.oten.edu.au
· www.arata.org.au · www.regencyrehab.cca.org.au · www.tscnsw.org.au

ENVIRONMENTAL / DOMESTIC EQUIPMENT

Environmental Control Units

- Environmental Control Units (ECU's) aim to increase the level of independence in the home environment. Domestic appliances are controlled using a single switch or a voice command input into the ECU which sends an output command to the appliance to operate it as required. Devices controlled may include lamps, lights, air conditioners, heaters, televisions, videos, stereos, electric doors, electric beds, page-turners, computers and telephones.
- They can vary from cheaper switch operated varieties to more complex voice activated systems.
- Voice Activated Systems can be controlled from wheelchair or bed level. Options include 'Simplicity', 'Sicare Pilot or Light' and 'Nemo'.
- Scanning devices can be used in combination with mouthsticks or a variety of switches (eg GEWA Prog ECU)
- Large remote controls that are programmable are also cheaper options for those with adequate functional ability.
- ECU's should be trialled before purchase and should meet the individual needs of the person.
- ECU's are available from Technical Solutions (Victoria), Northcott Society (NSW), and Regency Park (SA). See contact list for supplier details.

Personal Alarms

A number of people with SCI have personal care support provided by agencies (Home Care, Attendant Care) and family and friends. While the person has such support coming and going, there will be occasions where they will be alone. To alleviate any anxiety in

such a situation and to encourage independence for the person, an alarm system provides the person with a system where he/she can call for assistance at any time.

The transmitter can often be adapted to suit the individual needs of a person, depending on their level of injury. If the transmitter requires individual specifications, it is suggested that an Occupational Therapist coordinate/consult between the manufacturer and an organisation such as TAD (Technical Aid to the Disabled).

An example of a personal alarm supplier who will provide sip/puff and large switch adaptations are Vital Call. They cover both the Sydney Metropolitan area and regional NSW. This is just one example of a supplier. Contact the Independent Living Centre for options and details.

Home Management - To maximise the independence of a person with a Spinal Cord Injury, it is essential to modify the home to meet the individual's needs. (Please see home modifications section).

A number of products are commercially available to facilitate independence in performing home management tasks. The products are especially useful for those people with tetraplegia and limited hand function. Examples of the products include: chopping board with attached knife & spikes, large handled knives/ utensils, peeler with table clamp, jar openers, kettle tippers, Easy reachers, long-handled dustpans & brooms, built up pens and utensils.

Traymobiles and stable tables can be utilised to transport items or carry hot items to reduce the risk of burns on lower limbs. A front loading washing machine, and a lowered clothes line or front loading dryer, can facilitate independence in laundry tasks.

Many of the specialised products are available through stockists such as Able Rehabilitation, Total Patient Care, Smith & Nephew or Lifestyle & Rehab (Refer to Contact List for suppliers). If SCI clients require additional customisation of equipment then organisations such as TAD (Technical Aid for the Disabled) could be contacted, either for assistance or consultation.

For advice on other specialised equipement, you can call The Australian Quadriplegic Association (AQA) on its toll free number (1800 819 775) and ask the Information Service. This includes an up to date database and library service. The Independent Living Centre in Sydney is also a good resource. They have an equipment information database on their website.

Custom writing splint

FUNCTIONAL SPLINTS

The provision of upper limb (UL) splints is common practice in spinal injury units. Splints can be applied for a variety of clinical rationales, depending on the cervical lesion level. Not all clients are discharged with an UL splint, and maybe discharged with a ranging (PROM) program. Most clients need to be assessed on an individual basis and reviewed if there are any changes in their hand, e.g. if contractures start to develop.

In most cases for people with a **C4 lesion and above**, they will have a WHO - resting hand splint at night. This splint is designed to prevent contractures and maintain cosmesis. It places the hand in the position of rest or function. This is also often worn by people with C5 and C6 lesions at night.

For most patients with a **C5 lesion**, where they have weak or no active wrist extension, a WHO - wrist cock-up splint is used during the day to stabilise the wrist and thus increase function. These can be commercially available splints, such as the Futuro or a custom made leather or thermoplastic splint.

Writing splints and Typing splints, made of thermoplastic may be indicated. Contact a spinal unit to request a pattern. Both are also available commercially if required.

Wheelchair gloves prevent skin breakdown and may be essential for effective wheelchair propulsion. These can be bicycle gloves, or commercially available wheelchair gloves, through health product suppliers and also customised gloves available from some spinal units. For a person with tetraplegia, some commercially available wheelchair gloves from health product suppliers are not suitable, as the thumb position can affect a functional tenodesis grasp. Individual assessment is therefore required. For more detail, please contact AQA, PQ or the spinal units.

WORK

The Return to Work Process

Within the community there are a number of services available that provide vocational counselling, rehabilitation and work retraining, and assistance with finding employment.

CRS Australia provide vocational rehabilitation services to people with injuries and disabilities who are having difficulty accessing employment. Rehabilitation programs are designed to meet individual needs and are aimed at ensuring that people with disabilities gain or retain sustainable employment. CRS Australia provide the following services: (This information is care of CRS Australia website)

- Assessments
- Physical Conditioning Program
- Work Training
- Occupational Health and Safety
- Counselling Services
- Return to work programs
- Vocational Counselling
- Job Assistance / Search

Eligibility

Clients of CRS Australia are of working age (14 to 65 years), are permanent residents or Australian citizens, have a disability which affects their capacity to gain or retain employment and who meet Centrelink eligibility requirements.

Referrals

CRS Australia has offices in all major regional centres and throughout metropolitan Sydney. Referrals can be made directly to the nearest CRS Australia office. Offices are

listed in the White Pages or for your nearest office phone the **Free Call** number 1800 624 824. **Web Address:** www.crsrehab.gov.au

AQA Workforce is an employment agency whose goal is to find employment for people living with physical and sensory disabilities in the competitive labour market.

AQA Workforce specialises in the following areas:

- Pre-employment Assistance
- Internet Job Searches
- Resume Design
- Worksite Analysis
- Career Guidance
- Post Placement Support

Cost

The program is free to both employees and employers, as it is funded by the Commonwealth Department of Family and Community Services Referrals can be made directly to AQA Workforce by: **Phone:** (02) 9669 5277 or **email:** maya@aqa.org.au **Web Address:** www.aqa.org.au

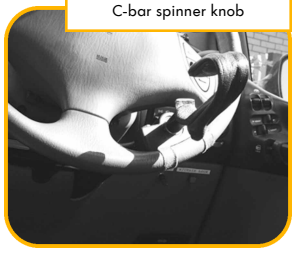
DRIVING

- Following a spinal cord injury, a driving assessment with a qualified Driving Occupational Therapist is usually required.
- The driving assessment will determine whether a person is ready to resume driving and to recommend any modifications that are required to drive, eg hand controls.
- Occupational Therapy Driving Assessments can be organised through your local CRS office or through a specialised Driving Centre.
- Coorabel Driving Centre and Cumberland Driver Rehabilitation Program are specialised driving centres in Sydney that can also be used as an information resource by people in rural areas. (See contact list for further information).
- Driving lessons will usually be conducted prior to undergoing the RTA Disability Driving Assessment.
- It is also possible for a person with a Spinal Cord Injury to drive a truck. This depends on the person's functional ability.

Car Modifications

- All modifications have to meet RTA guidelines that comply with Australian Design Rules. Modifications also have to be certified by a RTA approved engineer.
- Contact your local CRS unit for a list of people who carry out vehicle modifications in your local area. Some resources are:
- ParaQuad Engineering and Problem Management Engineering complete vehicle modifications in Sydney.
- Community Occupational Therapists at ParaQuad and The Australian Quadriplegic Association (AQA) provide information about suitable vehicles for people with SCI.

Some examples of Vehicle Modification Options:


C-bar spinner knob

- Hand controls to operate accelerator and brake. These may include the MPS Monarch, Push-Pull or Throttle (twist grip) controls.
- A spinner knob, fork attachment or C bar attachment to the steering wheel.
- Some vans can have automatic wheelchair lockdown restraints installed, automatic ramp, swivel seat if able to transfer and many other options. A person that is unable to transfer to a drivers seat or swivel seat can still drive independently with the automatic lockdown system and drive from their wheelchair.

A mobile phone is recommended in case of emergency whilst driving.

Disabled Parking

A disabled parking sticker is available from the RTA and enables a person with a disability to park in Accessible parking spots.

LEISURE

Recreation and leisure activities assist people to not only pursue their individual talents, abilities and interests but also develop many important relationships and social networks in the broader community. The following contact list may be useful in recreation and leisure pursuits:

- NSW Sport Council for the Disabled. www.nswscd.com.au
- NSW Wheelchair Sports Association www.nswwsa.org.au
- Recreation Services staff at Moorong Spinal Unit and Prince Henry Hospitals (See contact list).
- Technical Aid to the Disabled at Ph: (02) 9808-2366 or www.technicalaidnsw.org.au
- Achievable Concepts (Resource of recreation equipment for people with disabilities)
- Ph: (02) 9873 0182 or www.achievableconcepts.com.au

ENVIRONMENT

Home Modification Processes

The spinal units in Sydney are a state wide service. The assistance of rural community therapists is essential in the home modifications process. The OT's working on the spinal units will conduct home visit assessments and make recommendations for modifications, for clients living in the metropolitan area. For persons who are from rural areas, this is a geographical impossibility.

The home visit process is different for each individual, depending on their need, their housing situation prior to injury and whether or not they have any compensation. It can also be difficult to ascertain the expected functional level upon discharge for persons with an incomplete lesion. For people with a complete spinal cord lesion, where the

anticipated functional outcome can fairly accurately be anticipated, the home visit process can be started at an earlier time in their rehabilitation.

Government assistance for home modifications, for persons who **own their own home**, is provided under the Department of Ageing, Disability and Home Care (DADHC), under Home and Community Care (HACC). Any person with a disability is eligible. The funding is separated into three tiers: Level 1 under $5000; Level 2 $5000-$20 000, and Level 3 over $20 000. HACC has a funding policy, which is specific for 'high level modifications'. (For policy updates: www.dadhc.nsw.gov.au)

If a person was living in **rental accommodation** prior to their spinal cord injury, the possibility of an accessible home in the rental market is very low, and the majority of Landlords do not allow modifications. These individuals usually apply for priority housing, with the Department of Housing. List of local offices: www.housing.nsw.gov.au

For a person with a **compensible** spinal cord injury, the insurance company may elect to modify their existing home, or depending on their living situation, construct a more suitable home. When a new home is being constructed an architect is usually involved and in some cases a private occupational therapist will look after the entire process.

The role of the rural OT is vital to the smooth transition of clients from rehabilitation to their home environment. To maintain a client centred approach, the spinal OT's are responsible for the home visit recommendations report. This is because they are able to liaise closely with both the client (especially if it is their home that is being modified) and with the rehabilitation team, to ensure appropriate modifications are recommended according to their level of function. This is important in terms of the functional improvements, which occur during rehabilitation, especially for clients with an incomplete injury.

For those people with a SCI who are beyond the acute hospital / rehabilitation phase, and are wanting to modify their home, information on home modifications specific to SCI can be received from ParaQuad, AQA, or any of the spinal units. **A guideline for home modifications for people with a SCI, which was adapted from the Australian Standards, was written by a group of spinal occupational therapists. This is available on request from the above sources.**

The information provided in this factsheet is a general guideline to assist OT's treating people with SCI. It is important to consider each person as an individual, who within their environment and culture, has their own specific needs.

CONTACT LIST

Spinal Units/ Community Groups

AQA Australian Quadriplegic Association
Letter Box 40, 184 Bourke Rd
Alexandria NSW 2015
Ph: 9961 8855
Fax: 9661 9598
www.aqa.org.au
Info line, WorkForce, OT's.

ParaQuad, NSW
PO Box 63
Auburn, NSW, 2144
Ph: 9647 1966
Fax: 9637 9802
www.paraquad-nsw.asn.au
Spinal Advisors, OT's

The Prince Henry / Prince of Wales Hospital (PHH/POW)
Spinal Cord Injuries Unit
Occupational Therapy Department
Ph: 9382 5930
Fax: 9382 5989

The Prince Henry / Prince of Wales (PHH/POW)
Seating Clinic
Rehab Engineering Dept
Ph: 9382 5019
Fax: 9382 5434

Moorong Spinal Cord Injuries Unit
Occupational Therapy Dept
Ph: 9808 9269
Fax: 9809 9062
Neil Fitzer Unit
Seating clinic
Bio-medical Engineering Dept
RNSH / Moorong
Ph: 9926 7226

Royal North Shore Hospital (RNSH)
Spinal Cord Injuries Unit
Occupational Therapy Dept
Ph: 9926 8786
Fax: 9906 1448

Spine Care
Ph: 9809 0444
Fax: 9809 2065
Paediatric SCI
Case management

Ability Technology
PO Box 44
145 Sydney Road Fairlight
NSW 2094
Ph: 9907 9736
Fax:9907 9599
www.abilitycorp.com.au
Products:Assistive Technology

AdvocacyAble Rehabilitation
5 Millennium Court Silverwater NSW 2128
Ph: 9748 2600 Fax: 9798 5233
Products:Roho cushions Jay Cushions and Backrests, Action cushions, K-Care commodes
Custom Maroon cushions

AMS
12 Joseph Street Lidcombe NSW
Ph: 9649 2111 Fax:9649 2889
Products:Promed mobile hoists
Promed ceiling hoists,
Glide powered wheelchairs, Pride powered wheelchairs
Quickie powered wheelchairs, Roho cushions, Jay cushion

Arjo
Head Office: PO Box 675
Bulimba, QLD, 4171
Sales Reps NSW:
Paul Currie: 0417 663 946
Belinda Hunt: 0417 664 955
Service / Repairs:
(02) 9748 0636
Products:
Arjo Hoists and Slings
Eg: Trixie

Coorabel
Royal Ryde Rehabilitation Centre
227 Morrison Rd Ryde,
NSW, 2112
Ph: 9808 1144

Cush'n Soft
48 Canoelands Rd Glenorie, NSW 2157
Ph: 02 4566 6198
Fax: 02 4566 6125
Products:Cushioned toilet seats

DeJay Medical
1 Prince Willian Dr Seven Hills, NSW 2147
Ph: 9838 8869 Fax: 9838 7869
Products:RGK manual wheelchairs, RGK basketball wheelchairs

Department of Veterans Affairs
GPO Box 3994
Sydney, NSW, 1141
Ph: 133 254 or 9213 7777
Non-metro: 1 800 555 254
www.dva.gov.au

Driver Rehabilitation Program
Cumberland Health and Research Centre
University of Sydney
East St Lidcombe NSW, 2141
Ph: 9351 9282

Dunlop Flexible Foam
Lot 103 Frank Street
Wetherill Park, NSW, 2164
Ph: 9609 6177 Fax: 9725 4264
Products:Customised Foam products Cushions, Mattress Overlays

GTK Rehabilitation
Unit 11/ 14 Boden Rd
Seven Hills, 2147
Ph: 9620 9177
Fax: 9620 9081
www.gtkrehab.com.au
Products:Roho cushions
Jay backrests and cushions
Invacare products (infinity cushions and backrests, ultimate backrests and powered wheelchairs, etc), Ottobock, Rollerchair Powered wheelchairs
Mobility Plus Manual, Wheelchairs, DecPac Ramps, Invacare beds

Hamatic Bed Company
PO Box 666 Crows Nest,
NSW, 1585
Ph: 9906 6133 Fax: 9906 8889
Products: Electric Beds

Huntleigh HealthCare
Ph: 1800 072 040
Products:Nimbus III, Auto Excel, Alpha Excel, Vaperm mattress, Pentaflex mattress

Independent Living Centre NSW (ILC)
600 Victoria Rd Ryde
NSW 2112
Ph: 9808 2233
Toll Free 1800 800 523
www.ilcnsw.asn.au
Information on assistive equipment for people with a disability.

Law Society of NSW
www.lawsocnsw.asn.au

LifeStyle and Rehab
Unit 5/44 Atkinson Rd
Taren Point, 2229
Ph: 9526 2522 Fax: 9526 2507
www.lr.com.au
Products: Jay Cushions and backs
Roho cushions, Quickie Powered wheelchairs
Pride powered wheelchairs
DecPac portable ramps
Invacare beds

Mogo
Unit 5, 42 Canterbury Rd
Bankstown, 2200
Ph: 9708 5255 Fax: 9796 2479
Products: Mogo custom manual wheelchairs
Basketball wheelchairs
Tennis Wheelchairs

Motor Accidents Scheme
Motor Accidents Authority
Level 22, 580 George St
Sydney, NSW, 2000
Ph: 1 300 137 131
www.maa.nsw.gov.au

NSW Sporting Injuries Committee
Level 8, 400 Kent St
Sydney, NSW, 2000
Ph: 9370 5925
www.infarmation.com.au/sic

NorthCott DLD
Unit 20, The BellTower
194 Parramatta Rd Auburn,
NSW 2144
Ph: 9737 8080 Fax: 9737 8089
www.northcott.com.au
Products:Assistive technology
Action manual wheelchairs
Invacare products
Roho cushions
Levo standing wheelchairs
4x4 extreme (4WD PWC)

Otto Bock
5 Burbank Place
Baulkham Hills, 2153
Ph: 1300 136 056
www.ottobock.com.au
Products: Cloud Cushions
Padded armrests

ParaQuad Engineering
164-6 Beaconsfield St
Milperra, NSW, 2214
Ph: 9772 3888
Products: Slider, Vehicle modifications
Mobility Aids

PECS
Personal Equipment and Continence Supplies Service
Unit 3/ 41 Vore St Silverwater
NSW 2128
Ph: 9647 1966 Fax: 9647 1958

Pegasus Wooltec
Ph: 9567 2980
Fax: 9261 4440
Products: Pressure Care Mattresses, CareWave Bi-Wave, Vicalin, Trinova

Problem Management Engineering
8a kookaburra Rd
Hornsby Heights NSW 2077
Ph: 9482 2808
Products:Vehicle modifications

Regency Park Rehabilitation Engineering
PO Box 2438 Regency Park
SA 5942
Ph: (08) 8243 8348
www.regencyrehab.cca.org.au
Products: Assistive technology

Specialised Wheelchair Company
5/26 Wattle Road Brookvale
NSW 2100
Ph: 9905 5333
Fax:9905 2208
Mobile: 0408 300 233
Products:Glide Wheelchairs; Jay pressure care; Roho cushions

Starwell Australia Pty Ltd
PO Box 274 Archerfield Qld 4105
Ph: 1800 804 837
Fax: 1800 683 470

Surgical Synergies (Formerly Smith & Nephew)
PO Box 453
Kingsgrove, NSW, 1480
Ph: 1800 659 385
Fax: 1800 648 796
Products:Commercially available health products, Eg: typing and writing splints.

TAD (Technical Aid to the Disabled)
PO Box 108Ryde, NSW, 1680
For regional contacts refer to
www.technicalaid.org.au
Ph: 9808 2022
Fax: 9809 7670
Products: Creators of adapted equipment for people with disabilities

TecSol (Technical Solutions)
109 Ferndale Rd Silvan
VIC 3795
Ph: (03) 9737 9000
Fax: (03) 9737 9111
www.tecsol.com.au

The Spastic Centre (TASC)
189 Alambie Road Alambie Heights
NSW 2100
Ph: 9972 8183
www.thespasticcentre.org.au/services/index.htm#tasc
Products: Assistive Technology

Therapeutic Bed Company
Ph:9584 0454 Fax: 9584 3466
Products: Adjust-A-Bed

Total Patient Care
PO Box 6306 Nth Ryde
NSW 2133
Ph: 9878 6188 Fax: 9878 6795
Products: Commercially available health products
Eg. Writing and typing splints.

Victim Services
Locked Bag A5010
Sydney South NSW 1235
Ph: 9374 3111
www.agd.nsw.gov.au

Wheelchair Sales
Ph: 9621 8185 Fax: 9676 8460
Products: Quickie manual wheelchairs, Jay products

Service Providers

WorkCover NSW
Ph: 9370 5000 or 131 050
www.workcover.nsw.gov.au

The following are websites of some of the equipment manufacturers:

- www.glide.com.au
- www.seatingdynamics.coau (RoHo)
- www.invacare.com.au
- www.sunrisemedical.com.au
- www.ottobock.com.au

NOTES:

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Hammell, K.W. (1995). Spinal Cord Injury Rehabilitation. Chapman and Hall: London.

Karcz, J. (2002). Features of manual wheelchairs. Independent Living Journal, 15. Retrieved February 14, 2002, from http://www.ilcnsw.asn.au/features.cfm

Independent Living Centre (2002). Power Wheelchair Guidelines. Retrieved February 28, 2002, from http://www.ilcnsw.asn.au/electwchr.cfm

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Paralyzed Veterans of America (1999). Outcomes following traumatic spinal cord injury: clinical guidelines for healthcare professionals. Retrieved January 21, 2002, from http://www.pva.org/NEWPVASITE/publications/cpg-pubs/trauma.htm

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RURAL SPINAL CORD INJURY PROJECT
Project Officer:
Nickie Flambouras
PO Box 63 Auburn 2144 Tel: (02) 9637 9069

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